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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/814,089	03/31/2004	Robert E. Cypher	5681-13401	7300

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EXAMINER
BATAILLE, PIERRE MICHE

ART UNIT	PAPER NUMBER
2186	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
	10/814,089	CYPHER, ROBERT E.
Office Action Summary	Examiner	Art Unit	
	Pierre-Michel Bataille	2186	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS,
WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>23 September 2004</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-28</u> is/are pending in the application.

   4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1,5,6,14,17,22 and 25</u> is/are rejected.

7)☒ Claim(s) <u>2-4,7-13,15,16,18-21,23,24 and 26-28</u> is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

   Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   a)☐ All b)☐ Some * c)☐ None of:

   1.☐ Certified copies of the priority documents have been received.

   2.☐ Certified copies of the priority documents have been received in Application No. _____.

   3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
       application from the International Bureau (PCT Rule 17.2(a)).

   * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
   Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date. _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1.   Claims 1-28 have been examined.

2.   The specification has not been checked to the extent necessary to determine the
presence of all possible minor errors.

      Applicant's cooperation is requested in correcting any errors of which applicant
may become aware in the specification.

Double Patenting

3.   The nonstatutory double patenting rejection is based on a judicially created
doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the
unjustified or improper timewise extension of the "right to exclude" granted by a patent
and to prevent possible harassment by multiple assignees.   A nonstatutory
obviousness-type double patenting rejection is appropriate where the conflicting claims
are not identical, but at least one examined application claim is not patentably distinct
from the reference claim(s) because the examined application claim is either anticipated
by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140
F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29
USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir.
1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422
F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163
USPQ 644 (CCPA 1969).

      A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d)
may be used to overcome an actual or provisional rejection based on a nonstatutory

double patenting ground provided the conflicting application or patent either is shown to

be commonly owned with this application, or claims an invention made as a result of

activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a

terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with

37 CFR 3.73(b).

4.   Claims 1-28 are rejected on the ground of nonstatutory obviousness-type double

patenting as being unpatentable over claims 7-29 of U.S. Patent Application No.

10/821,371. Although the conflicting claims are not identical, they are not patentably

distinct from each other because claims 7-29 of copending application 10/821,371

anticipate claims 1-28 of the instant application. The following outlines claim

correspondence. Please note that this is simply exemplary.

Application	10/821,371
A node for use in a multi-node computer system, the node comprising:	A multi-node system, comprising:
a plurality of active devices;	a node including a plurality of active devices and
an interface configured to send and receive coherency messages on an inter-node network coupling nodes in the multi-node computer system;	an interface coupled by an address network configured to convey address packets between the interface and the plurality of active devices, and
an address network configured to communicate address packets between the active devices and the interface; and	a data network configured to convey data packets between the interface and the plurality of active devices, wherein the address network and the data network are separate networks;

a data network configured to communicate data packets between the active devices and the interface;	an inter-node network configured to convey coherency messages between the interface in the node and an additional interface in an additional node, wherein the additional interface is configured to send a coherency message requesting a read access right to a coherency unit on the inter-node network, wherein a given active device of the plurality of active devices has an ownership responsibility for the coherency unit; wherein the interface is configured to respond to the coherency message by sending a proxy address packet on the address network;
wherein the active device includes a promise array configured to store a promise identifying a data packet to be conveyed to a device in response to a pending local transaction involving a coherency unit for which the active device has an ownership responsibility; wherein the active device is configured to store promises in the promise array in response to receiving address packets from other ones of the plurality of active devices and from the interface.	wherein a different active device of the plurality of active devices is configured to request a read access fight to another coherency unit by sending an address packet on the address network; wherein the given active device of the plurality of active devices has an ownership responsibility for the another coherency unit, wherein the given active device is configured to not transition the ownership responsibility for the another coherency unit in response to the address packet and to transition the ownership responsibility for the coherency unit in response to the proxy address packet.

Claim Rejections - 35 USC § 103

5.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

6.   The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

    1.   Determining the scope and contents of the prior art.
    2.   Ascertaining the differences between the prior art and the claims at issue.
    3.   Resolving the level of ordinary skill in the pertinent art.
    4.   Considering objective evidence present in the application indicating
            obviousness or nonobviousness.

7.   Claims 1, 5-6, 14, 17, 22 and 25 are rejected under 35 U.S.C. 103(a) as being

unpatentable over US 5,434,993 (Liencres) in view of US 2003/0217234 (Rowlands et

al).

        With respect to claims 1, 14, and 22, Liencres teaches computer system having a

plurality of active devices (21, 31 & 32); an interface (31); an address network

configured to communicate address packets between the active devices and the

interface; and a data network configured to communicate data packets between the

active devices and the interface [Col. 6, Lines 38-49]; wherein the active device

includes a promise array configured to store a promise identifying a data packet to be conveyed to a device in response to a pending local transaction involving a coherency unit for which the active device has an ownership responsibility; wherein the active device is configured to store promises in the promise array in response to receiving address packets from other ones of the plurality of active devices and from the interface [Col. 6, Lines 50-60]. Liencres fails to specifically teach sending and receiving coherency messages on an inter-node network coupling nodes in the multi-node computer system. However, Rowlands teaches a multimode computer system (figs. 1-3), comprising: a plurality of active devices (processors, memory and I/O bridge (agents)); an interface configured to send and receive coherency messages on an inter-node network coupling nodes in the multimode computer system (2A- 12N, Fig. 1); an inter-node network configured to communicated address packets between the active nodes and the interface (Fig. 1, Fig. 2; par. 0030-0032), wherein the interface is configured to send a coherency message requesting a read access right to a coherency unit on the inter-node network (Par. 0108, Par. 0030-0032), wherein a given active device of the plurality of active devices has an ownership responsibility for the coherency unit (Par. 0110, 0030-0032); wherein the interface is configured to respond to the coherency message by sending a proxy address packet on the address network (Para. 0110, 0130). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the coherency protocol as taught by Rowlands in Liencres's system because the result would have reduce the bandwidth requirement of the system.

8.   With respect to claims 5-6, 17, 25, Rowlands teaches a remote node can acquire

cache line in shared state or in modified state (i.e. exclusive ownership) and in modified

state the node can give an exclusive ownership to a single agent; multiple nodes with

multiple active devices communicates with each other and share data requiring any

active device in any node can be capable requesting a read access right to any

coherency unit; transitioning ownership, when active device from remote node requests

a read access right to coherency unit (Par. 0069 -0071]); when active device from

another node requests read access to coherency unit from owner, the owner writes

back the cache line and transitions state (global state) from modified to shared and

hence the ownership of the coherency unit [Par.0025].

Allowable Subject Matter

9.   Claims 2-4, 7-13, 15-16, 18-21, 23-24, and 26-28 are objected to as being

dependent upon a rejected base claim, but would be allowable if rewritten in

independent form including all of the limitations of the base claim and any intervening

claims.

Conclusion

10.   The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure.

US 6,374,332 (Mackinthun et al) teaching cache control system for performing

multiple outstanding ownership requests.

US 5,434,993 (Liencres et a) teaching methods and apparatus for creating a pending write-back controller for a cache controller on a packet switched memory bus employing dual directories

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pierre-Michel Bataille whose telephone number is (571) 272-4178. The examiner can normally be reached on Mon, Tue-Fri (8:00A to 5:30P).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew M. Kim can be reached on (571) 272-4182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Pierre-Michel Bataille/
Pierre-Michel Bataille
Primary Examiner
Art Unit 2186